Dr. Dirk Lucas

Current position

Head of the Division "Computational Fluid Dynamics" at Institute of Fluid Dynamics, HZDR (since 2012)

Previous positions

Research fellow at Forschungszentrum Dresden-Rossendorf (FZD), Institute of Safety Research (1992-2011)
Research fellow at Technical University Zittau (1991-1992)
Scientific Assistant at Technical University Zittau (1988-1991)

Scientific degrees

Dr. rer. nat. (PhD) in Physics, Technical University Dresden, Germany (1991)
Diploma in Physics, Technical University Dresden, Germany (1988)

Recent research topics

Modelling and experimentation on multiphase flows, Computational Fluid Dynamics, Nuclear reactor safety, Chemical engineering

Publications (5 most important)

- **S. Hänsch, D. Lucas, T. Höhne**, E. Krepper, Application of a new concept for multi-scale interfacial structures to the dam-break case with an obstacle, *Nucl. Eng. and Design* 279, 171 (2014) doi:10.1016/j.nucengdes.2014.02.006
- T. Ma, C. Santarelli, T. Ziegenhein, **D. Lucas,** J. Fröhlich, Direct numerical simulation-based Reynolds-averaged closure for bubble-induced turbulence, *Phys. Rev. Fluids*, 2, 034301 (2017) doi:10.1103/PhysRevFluids.2.034301
- T. Ziegenhein, A. Tomiyama, **D. Lucas**, A new measuring concept to determine the lift force for distorted bubbles in low Morton number system: Results for air/water, *Int. J. Multiphase Flow* 108, 11 (2018) doi:10.1016/j.ijmultiphaseflow.2018.06.012
- **D. Lucas, R. Rzehak**, E. Krepper, T. Ziegenhein, **Y. Liao,** et al., A strategy for the qualification of multi-fluid approaches for nuclear reactor safety, *Nucl. Eng. and Design* 299, 2, (2016) doi:10.1016/j.nucengdes.2015.07.007
- **Y. Liao,** T. Ma, E. Krepper, **D. Lucas,** J. Fröhlich, Application of a new model for bubble-induced turbulence to bubbly flows in containers and vertical pipes, *Chem. Eng. Sci.* 202, 55 (2019) doi:10.1016/j.ces.2019.03.007